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AUGUST 19, 2019

BOSTON & J STREET DRAINAGE REVIEW

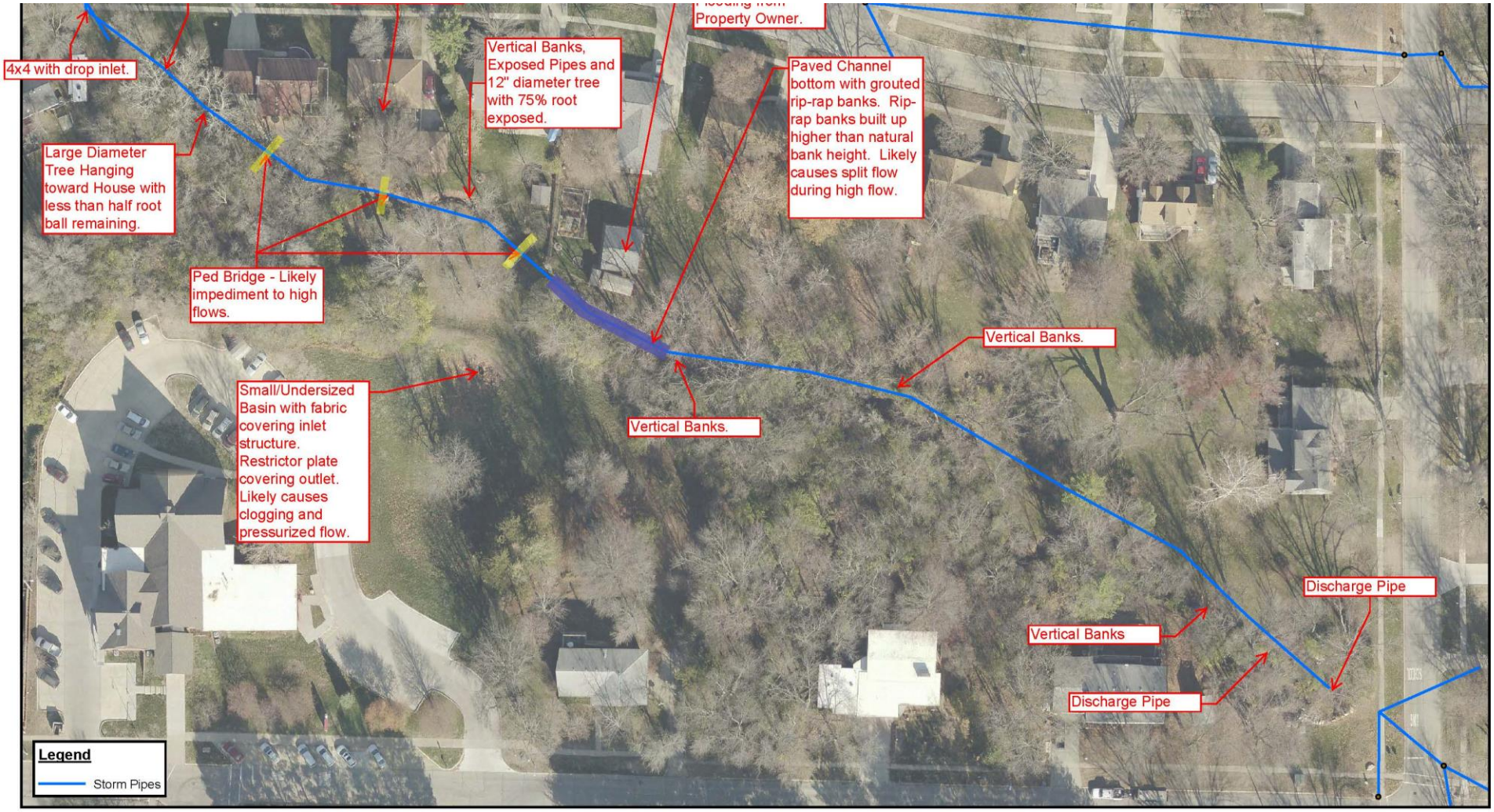
CITY OF INDIANOLA, IOWA

Project Purpose & Need

- Historical intersection flooding
- Neighborhood/property owner concerns
- Clinton Avenue overtopping
- Pavement distress

Project Goals

- Identify issues
- Detailed hydrologic and hydraulic analysis :
  - Will drainage improvements at intersection create more problems?
  - Will culvert replacement at Clinton Avenue eliminate channel flooding
  - Existing channel performance
- Identify improvement options
- Preliminary design



Watershed Evaluation

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- Garage flooding

- Tree erosion

- Pedestrian bridge

Watershed Evaluation

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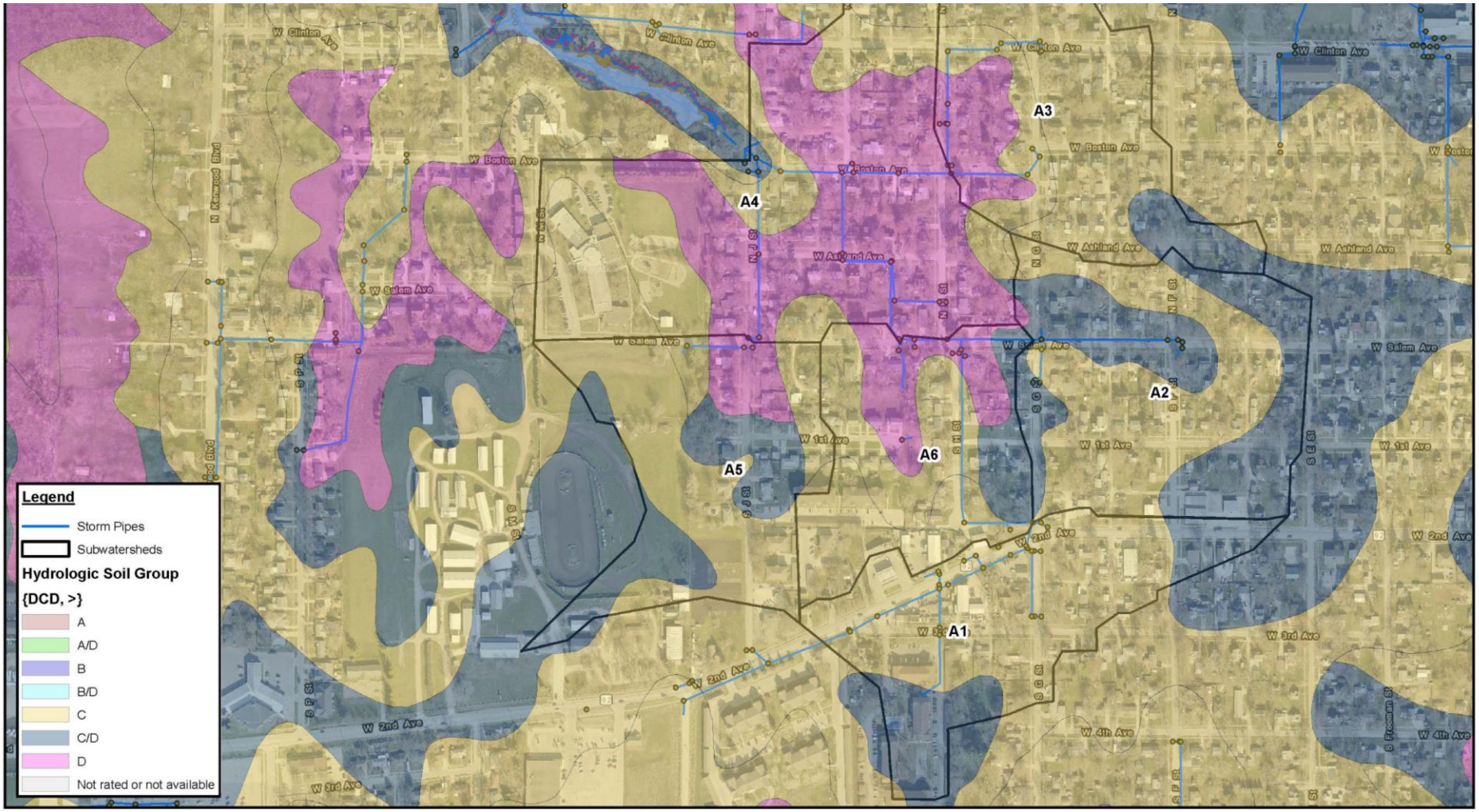

Watershed Evaluation

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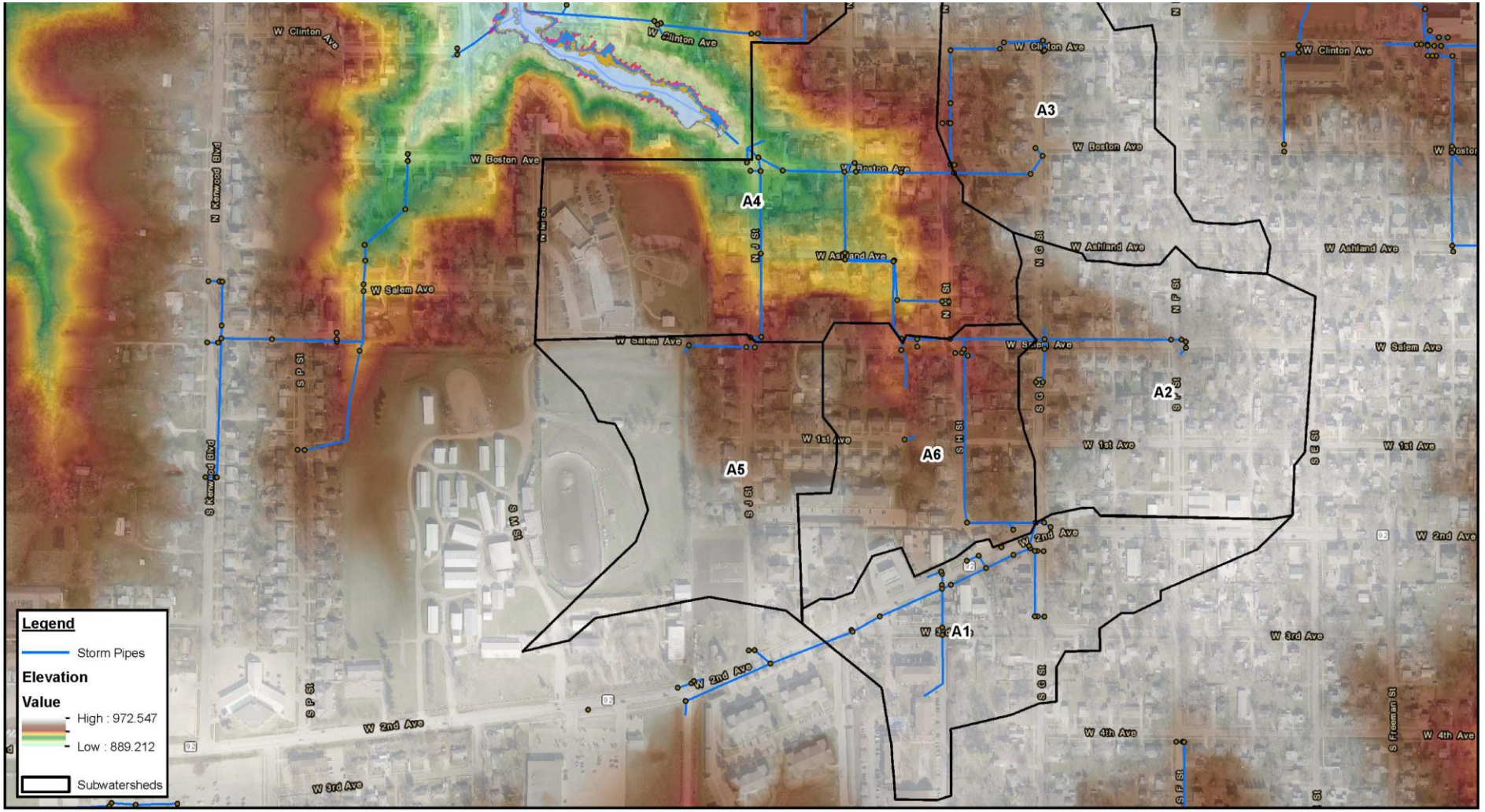

Watershed Evaluation

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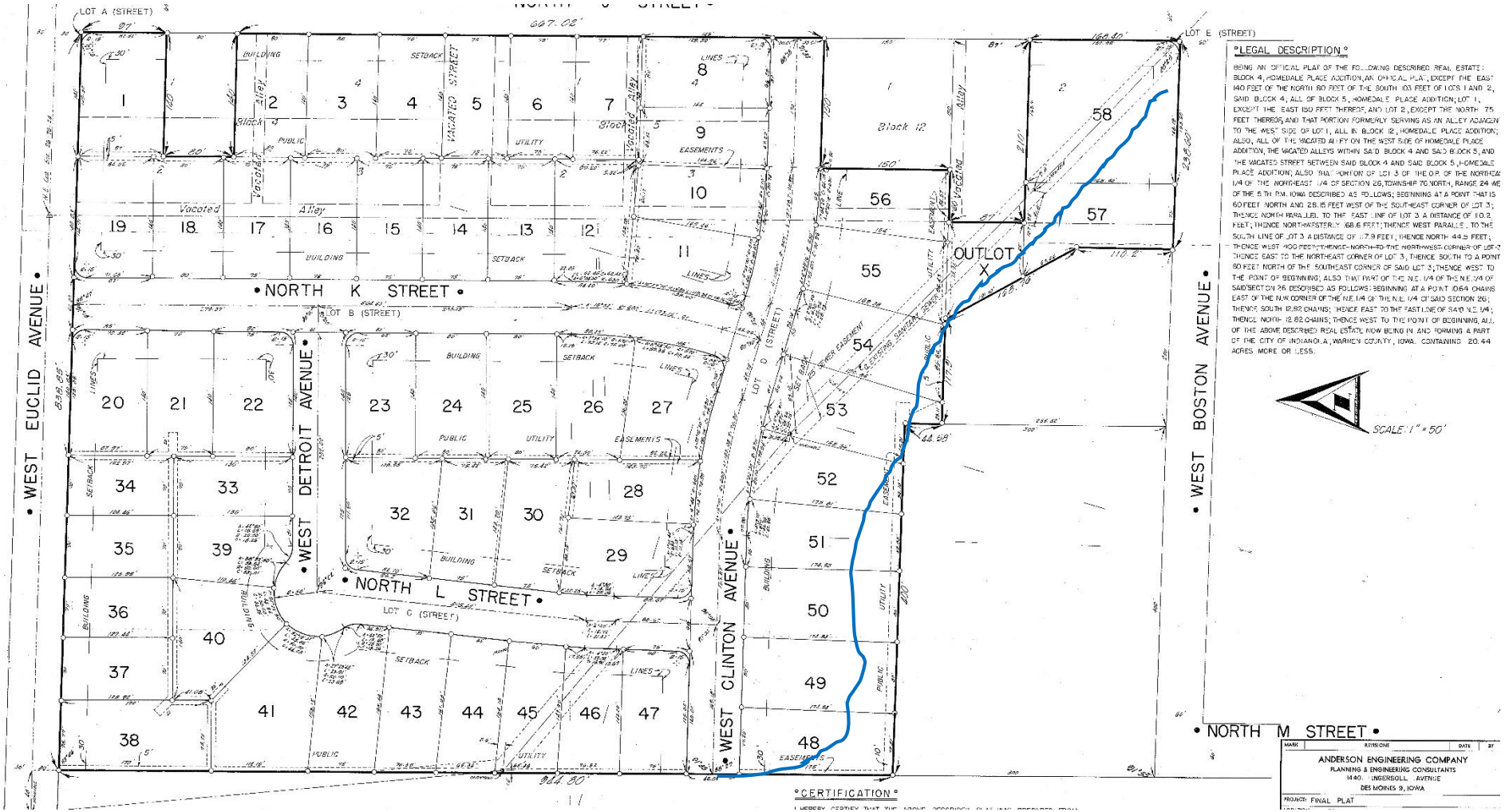

Watershed Evaluation

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Hydrologic Summary

Year	Flow (CFS)		
	Channel Start	Into Culvert	Downstream
5	344	365	709
10	437	462	863
25	577	612	1030
50	692	733	1146
100	812	861	1257

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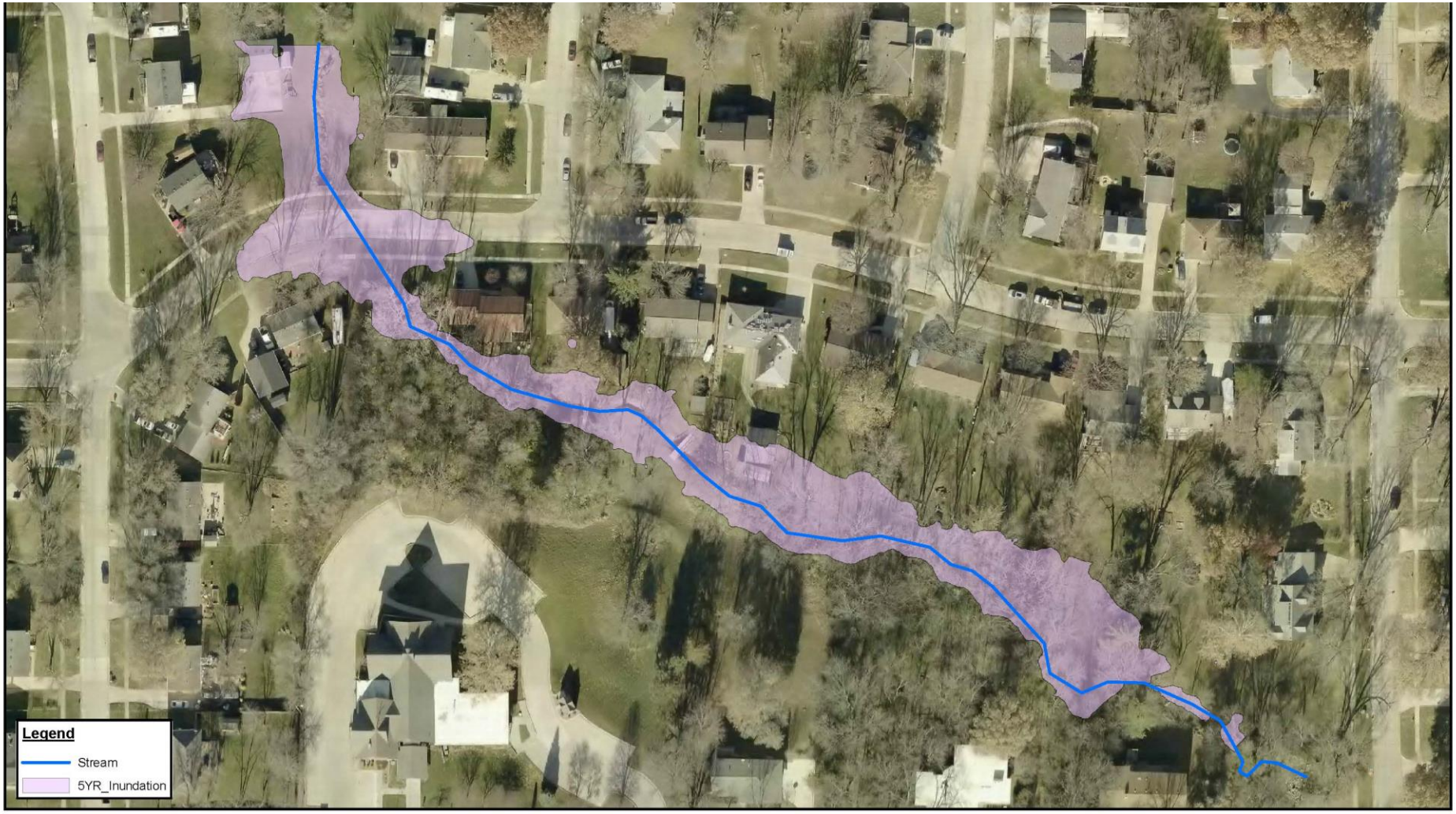

Hydraulic Model
5 Year Inundation

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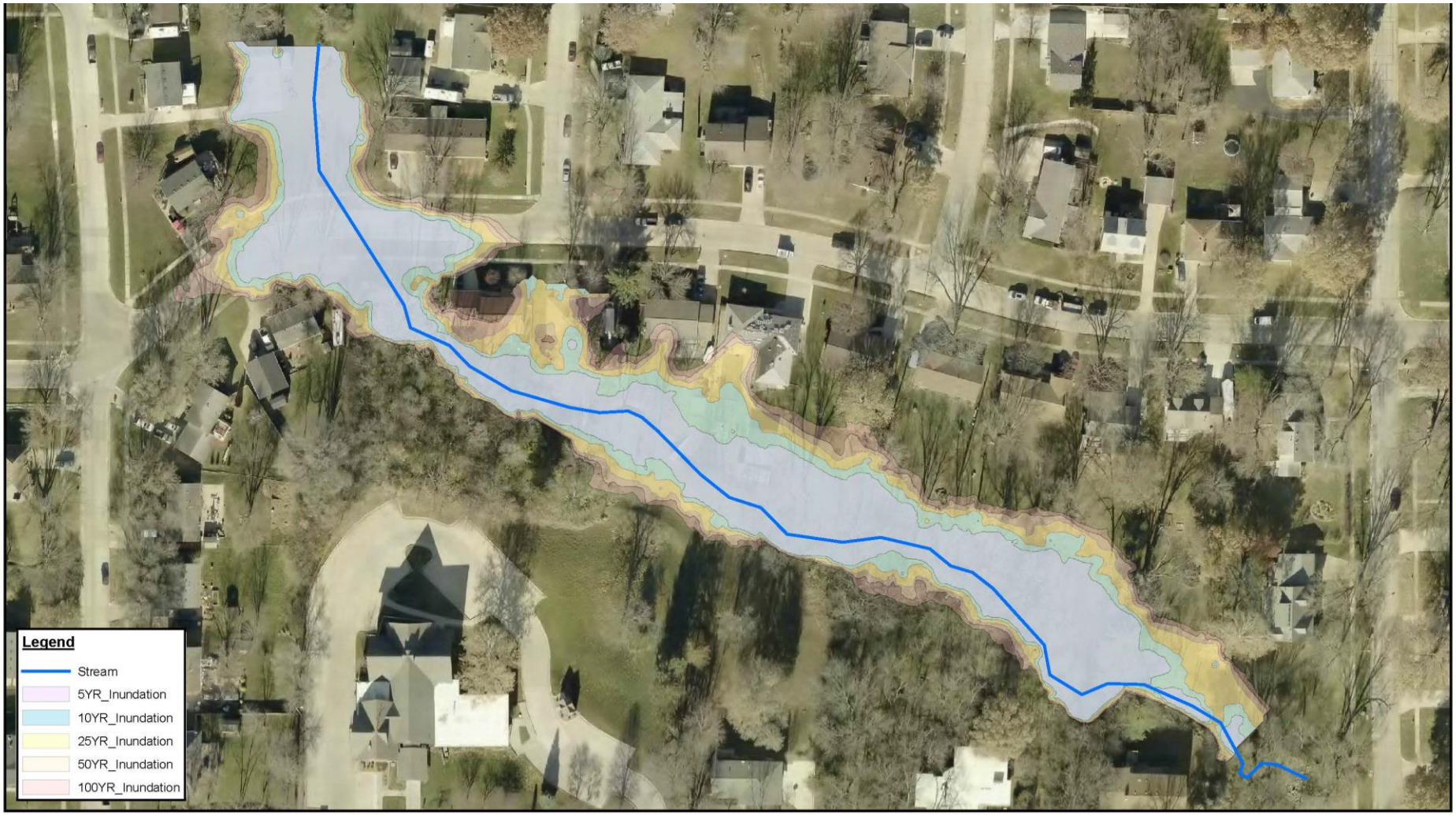

Hydraulic Model
5-100 Year Inundation

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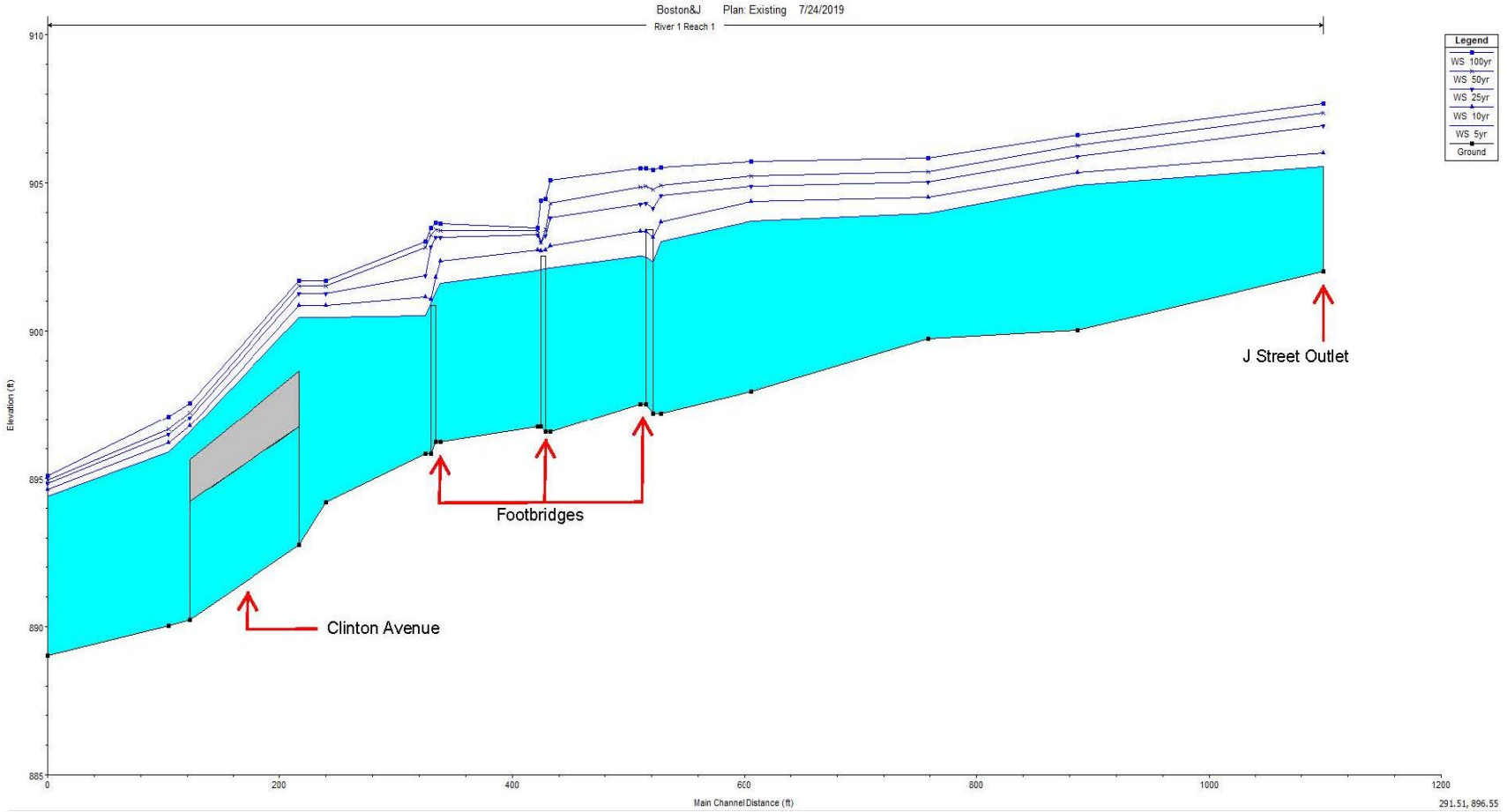

Hydraulic Model

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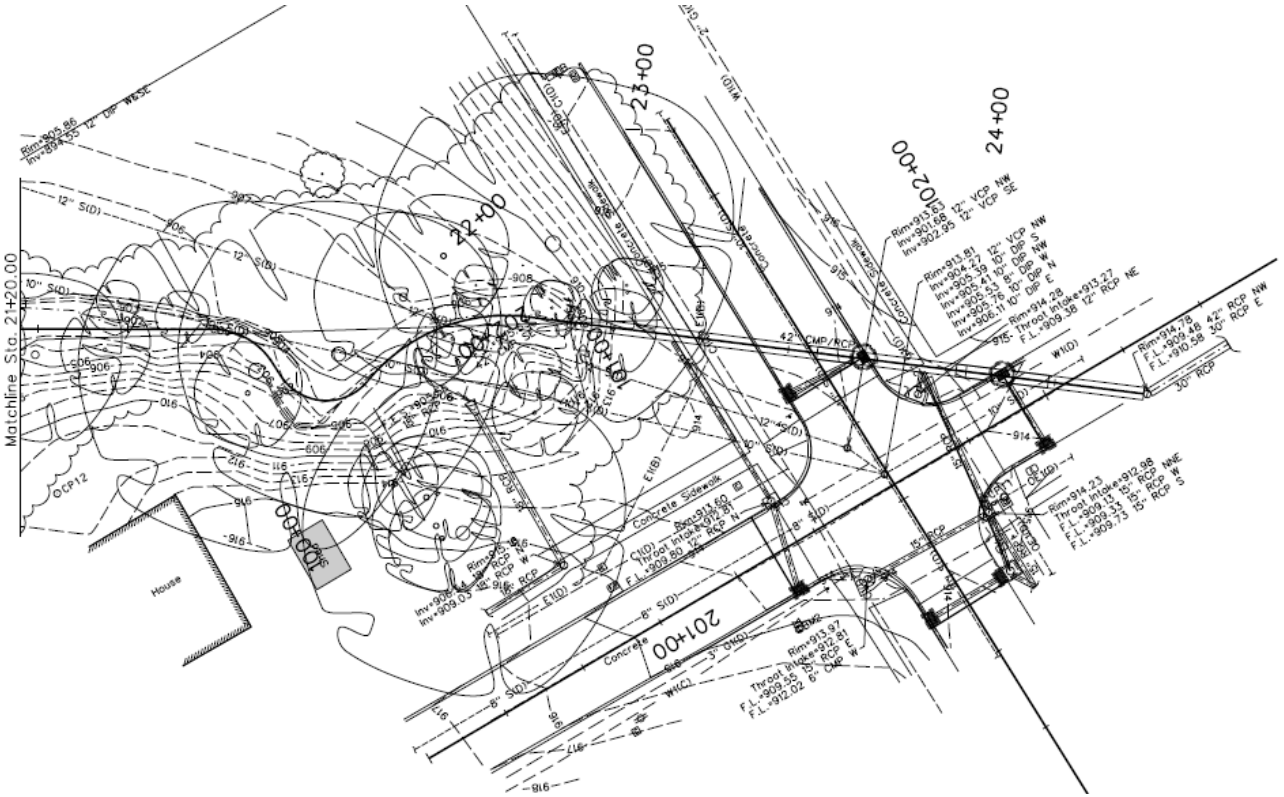
PRELIMINARY CONCLUSIONS

Preliminary Conclusions

- Intersection drainage improvements will not adversely impact channel



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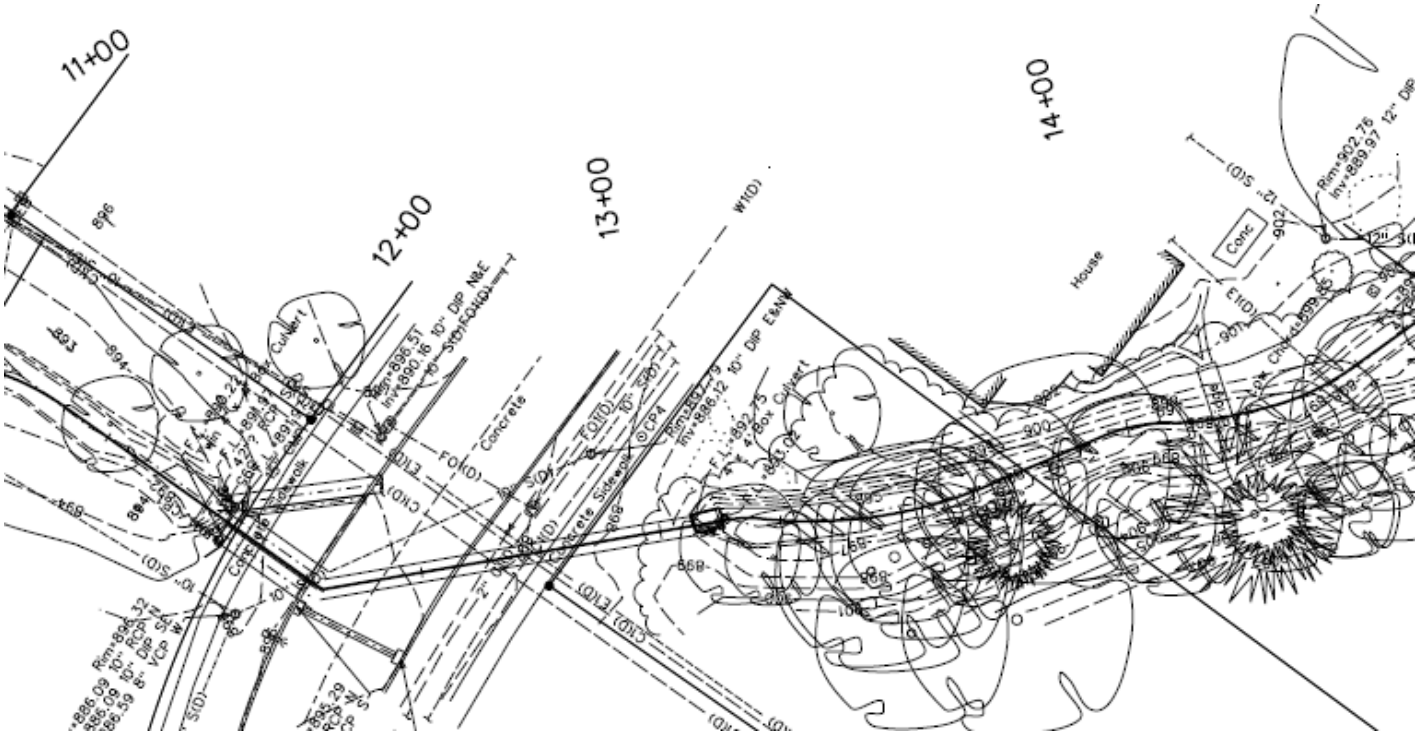
Preliminary Conclusions

- Culvert replacement at Clinton Street
  - Can reduce frequency of overtopping
  - Only slightly improves channel performance



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Preliminary Conclusions

- Channel improvements possible
  - Private property – limited authority
  - Neighborhood cooperation and participation
  - No precedent project to follow
- Minor watershed improvements possible

Council Concurrence and Direction

- Direction for design parameters scope of project(s)
  - Design storm for intersection drainage
  - Design storm for Clinton Avenue culvert
  - Engagement with neighborhood
- Prioritization of project
- Next steps?

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